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Case Report

Pediatric Talar Neck Fracture in a 4-Year-Old: A Rare Hawkins Type I Injury with Full Recovery

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ABSTRACT

Background and objectives: Talar fractures are rare in the pediatric population due to the predominantly cartilaginous composition and pliability of immature bone. Their infrequency and subtle radiographic findings can delay diagnosis. Moreover, these injuries carry a risk of complications such as avascular necrosis (AVN), post-traumatic arthritis, and growth disturbances. This report aims to highlight the presentation, management, and outcome of a pediatric talar neck fracture.

Presentation of the case: A 4-year-old boy presented following a fall from height with pain and swelling in the ankle. Radiographic evaluation revealed a minimally displaced talar neck fracture (Hawkins type I). The patient was treated conservatively with below-knee cast immobilization. Regular follow-up with clinical and radiological assessment showed satisfactory healing without displacement or signs of AVN.

Discussion: Paediatric talar fractures require a high index of suspicion for accurate diagnosis. Hawkins type I fractures are stable and can often be managed non-operatively with immobilization. Early diagnosis and appropriate treatment are critical to minimize complications. Long-term follow-up is essential to monitor for AVN and other sequelae, although the risk is lower in minimally displaced fractures.

Conclusion: Minimally displaced talar neck fractures in children can be effectively managed with conservative treatment, resulting in excellent functional outcomes when diagnosed early and monitored closely.

Keywords: Avascular necrosis; Conservative management; Cast immobilization; Hawkins type I; Pediatric talus fracture; Talar neck fracture

INTRODUCTION

Fractures of the talus in children are uncommon, accounting for only about 0.08% of all pediatric fractures and estimated to be five times rarer than adult talar injuries [1,2]. This rarity is attributed to the high cartilage content and elastic properties of growing bones, which confer increased resilience against fractures. When pediatric talar fractures do occur, the neck of the talus is the most frequently affected site, followed by the body [3,4]. Prompt diagnosis is essential, as missed or untreated injuries may result in serious complications including avascular necrosis, growth plate disturbances, and degenerative arthritis.

Case Report

A 4-year-old boy presented to our outpatient department following a fall from a height of approximately 10 feet. The patient complained of pain and swelling in the left ankle.

Figure 1: Clinical picture showing swollen left ankle (from the front)

Clinical examination revealed diffuse swelling, localized tenderness, and ecchymosis on the medial aspect of the ankle (Figures 1 and 2).

Figure 2: Clinical picture showing swelling and ecchymosis over medial side of left ankle (from the side)

Figure 3: Radiograph of left ankle AP and Lateral views showing undisplaced neck of Talus fracture (Hawkins type –I)

Active and passive range of motion of the ankle and foot were limited due to pain. Neurovascular status was intact. Plain radiographs of the left ankle (Figure 3) demonstrated a minimally displaced talar neck fracture, consistent with Hawkins type I a fracture of the talar neck without subtalar or tibiotalar joint dislocation [5].

The fracture was treated with a non-weight bearing below knee cast for 6 weeks (figures 4 and 5). Syrup paracetamol as an analgesic was given according to his weight. Patient was advised for strict limb elevation to prevent swelling and non- weight bearing for six weeks. After 6 weeks, x-rays (figures 6 and 7) were done which showed consolidation of the fracture without any sign of AVN. Cast was removed in OPD and the patient was able to bear weight without any pain and was able to resume all his daily activities.

Figure 4: Clinical picture after application of below knee cast (from the side)

Figure 5: Clinical picture after application of below knee cast (from the front)

Figure 6: AP radiograph of left ankle showing union of the fracture of neck of talus at 6 weeks

Figure 7: Lateral radiograph of left ankle showing union of the fracture of neck of talus at 6 weeks

This case underscores the importance of timely recognition and appropriate conservative management of pediatric talus fractures. Immobilization in a cast has been shown to yield favorable outcomes in minimally displaced injuries and reduce the risk of complications such as AVN. [1] At 6 weeks post-treatment, the child had pain-free mobility and resumed normal activity,

highlighting the efficacy of non-operative management in selected cases.

DISCUSSIONS

Talar fractures in the pediatric population are rare, constituting approximately 0.008–0.08% of all pediatric fractures and 0.3% of adult fractures. [6,7] These injuries typically result from high-energy axial loading, such as falls from significant height or vehicular accidents, where dorsiflexion forces the talar neck against the anterior tibia. The current case aligns with this mechanism, as the injury was sustained during a fall from 10 feet. Management strategies depend on the displacement and stability of the fracture. Hawkins type I fractures are generally treated with cast immobilization, which offers favorable outcomes in young children due to the high remodeling potential of pediatric bone. Meier et al. [1] studied 15 pediatric patients (ages 4–16) with talar neck or body fractures and found that Hawkins type I and II fractures responded well to conservative management. Only two patients in their cohort required subsequent arthrodesis. Similarly, Smith et al. [8] evaluated 29 pediatric talus fractures and reported no cases of persistent AVN in children under the age of 12. Their findings support the notion that younger children possess a greater healing potential and lower complication rates, especially with non-displaced or minimally displaced fractures. They emphasized the lack of consensus guidelines for managing pediatric talar fractures and the importance of early diagnosis and individualized treatment plans.

CONCLUSIONS

A high index of suspicion should be maintained for talar fractures in children presenting with ankle pain after trauma. Early imaging is essential. Non-displaced or minimally displaced (Hawkins type- I) fractures can be managed conservatively with good outcomes, but require close follow-up to detect complications early.

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REFERENCES

1. Meier R, Krettek C, van Griensven M, Miclau T. Fractures of the talus in the pediatric patient. Foot Ankle Surg 2005;11(1):5–10.
2. We L, Me H. Fractures of the child's foot. Orthopade 1986;15(3). Available from: https://pubmed.ncbi.nlm.nih.gov
3. Byrne AM, Stephens M. Paediatric talus fracture. BMJ Case Rep 2012;2012:bcr1020115028.
4. Eberl R, Singer G, Schalamon J, Hausleitner L, Hoellwarth ME. Fractures of the talus: Differences between children and adolescents. J Trauma 2010;68(1):126–130.
5. alkhani IS, Reidy D, Fogarty EE, Dowling FE. Avascular necrosis of the talus after a minimally displaced neck of talus fracture in a 6-year-old child. Injury 2000;31(1):63–65.
6. Nipun J, Parmanand G, Sandeep J. Nonunion of paediatric talar neck fracture. Chin J Traumatol 2014;17(1):48–49.
7. Byrne AM. Paediatric talus fracture. BMJ Case Rep 2012 Aug 5. Available from: https://pubmed.ncbi.nlm.nih.gov
8. Smith JT, Curtis TA, Spencer S, Van Bosse HJP, Krengel WF, Hassink RI. Complications of talus fractures in children. J Pediatr Orthop 2010;30(8):779–784.